

Information Requested for Review of Heavy-Duty Electric Vehicles and Non-Combustion Hybrid Vehicles

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The Air Resources Board is required by Health and Safety Code Section 43150 to certify all on-road vehicles. California regulations for heavy-duty zero-emission vehicles pertaining to criteria pollutants (HC, NO_x, CO, PM) are still in the development process. During the interim, manufacturers may sell heavy-duty electric vehicles and non-combustion hybrid vehicles in California without an Executive Order pertaining to criteria pollutants if certified to and issued an Executive Order for the greenhouse gas pollutants (see next paragraph). Manufacturers wishing to convert vehicles previously certified must follow ARB's Engine Change Policy. Contact by email Tony Martino, Section Manager, of the Aftermarket Parts section for more information.

California regulations for heavy-duty zero-emission vehicles pertaining to greenhouse gas pollutants (CO₂, N₂O, CH₄, HFC, PFC, SF₆) do exist in 17 CCR 95660-95664 and in 40 CFR 1037 (as incorporated in the California Test Procedures). These regulations require that heavy-duty zero-emission vehicles be grouped into greenhouse gas (GHG) vehicle families and be certified to be valid for sale in California. Each GHG vehicle family must be assigned a unique family name by the manufacturer, in accordance with the established EPA family naming conventions. Refer to the EPA document CD-15-19 for information on proper family naming. Executive Orders pertaining to GHG pollutants are not being granted at this time to powertrains to be installed in electric vehicles and non-combustion hybrid vehicles. At this time, only whole electric vehicles are being certified pertaining the GHG pollutants, and Approval Letters and Executive Orders for criteria pollutants are not being issued for electric vehicles or electric powertrains.

Electrified off-road compression-ignition (OFCI) equipment (e.g. electric terminal trucks) do not meet the criteria of 'Off-road vehicle' or 'Off-road equipment' as defined in 13 CCR 2421, but may possibly satisfy the criteria of 'Heavy-duty vehicle' as defined in 40 CFR 1037.801 (as incorporated), if self-propelled and possessing a GVWR greater than 8500 lbs. Consequently, such electrified off-road heavy-duty vehicles are subject to the GHG regulations (if not excluded or exempted by 40 CFR 1037.5 or 40 CFR 1037.631) and other requirements as on-road heavy-duty vehicles are.

Heavy-duty hybrids are defined as heavy-duty vehicles, including urban buses, that can draw propulsion energy from both of the following sources of stored energy: 1) a consumable fuel and 2) a rechargeable energy storage system that is recharged by an electric motor-generator system, an external electric energy source, or both ("California Interim Certification Procedures for 2004 and Subsequent Model Hybrid-Electric and Other Hybrid Vehicles in the Urban Bus and Heavy-Duty Vehicle Classes", adopted October 24, 2002, as amended on October 21, 2014). Typical examples of non-combustion hybrids are hydrogen fuel cell vehicles, and other non-combustion hybrids using flywheels, hydraulic storage, or other non-combustion means of propulsion energy.

The following list is a summary of the information requested to describe the vehicle family specifications and other basic parameters of design, in accordance with 40 CFR 1037.205(a), and to demonstrate that the heavy-duty vehicles do not utilize combustion nor emit any regulated vehicle exhaust emissions or fuel-based evaporative emissions. In all documentation, do not use the phrase 'Zero-Emission' in order to avoid conflict with future heavy-duty ZEV regulations. The phrase 'zero emissions' is acceptable because it is a description and not a title. Submit the following information for each group of vehicles:

- 1 Cover letter addressed to the chief of the ECARS Division. This letter must declare a GHG vehicle family name according to 40 CFR 1037.230 with character '2' in the fifth position {see CISC-07-03 and CD-12-01 (revised)(HDV) for more information}, indicate whether the Deem-to-Comply option described in Section 1037.101.3 of the California GHG test procedures ("California Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model Heavy-Duty Vehicles," adopted October 21, 2014) is being utilized, and request an Executive Order for GHG pollutants be issued for the specified GHG vehicle family.
- 2 Technical description of the family vehicles, including diagrams, photographs, etc. As applicable, must include:
 - a. Intended service class and typical anticipated duty cycles
 - b. Environmental controls (HVAC)
 - c. Material(s), construction, physical form factor, and dimensions
 - d. Capacity of batteries, storage tanks, etc. and testing protocols used
 - e. Intended operating conditions and expected longevity under these conditions
 - f. Description of recharging procedures and any fast recharging capability
 - g. Part numbers of battery and fuel cell components
 - h. Vehicle trade names
 - i. Warranties on components and maintenance schedules
 - j. Longevity information over the duration of the applicable useful life
 - k. End-of-life disposal plan
- 3 A statement answering the following in regards to vehicle GHG emissions:
 - a. Are any defeat devices employed on the vehicle?
 - b. Have all AECD's been declared and described?
 - c. Are any alternate maps employed on the vehicle?
- 4 If the Deem-to-Comply option is used, a Certificate of Conformity, issued by EPA. ARB asks that manufacturers provide the technical description requested in item 2, regardless of what information is required by EPA. ARB may require information be formatted in a manner differing from that accepted by EPA.
- 5 Label samples which adhere to the labeling requirements in 40 CFR 1037.135. Except for electric urban busses, the label must include the following statement: 'No fuel-fired heaters may be installed.'
- 6 Include an estimate of the number of sales for the vehicles.
- 7 Statement of compliance which attests to the adherence with DOT / NHTSA / CHP requirements.
- 8 The EPA document "Greenhouse Gas Certification Template", OMB Control No: 2060-0678, with information in the 'General Family Info' tab and in the 'AECD', 'Technology Worksheet', and 'HFC Worksheet' tabs, as needed. No information is required in the 'GEM Input' and 'GEM Output' tabs.